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ACTIVITY OF THE INTERNATIONAL INSTITUTE OF AGRICULTURE

Permanent Committee of the Institute. — The Permanent Committee of the Institute met regularly on October 3, 1940 for the third session of the year. A large number of Delegates, representing about thirty Member States, attended the meeting.

The Agenda, which included twelve points, dealt with administrative, financial and technical questions concerning the present and future activities of the Institute.

Of particular interest was a statement by Mr. Marquis, Delegate of the United States of America and Vice-President of the Permanent Committee, on the plan for the future work of the Institute. A general discussion on this point led to the drafting of a preliminary note to be sent to the adhering States, on *the program of work of the International Institute of Agriculture during the present hostilities and the reconstruction period following the end of the war.*

The quarterly Report of the Secretary General on all the Institute activities, gave the Delegates the opportunity to express their satisfaction at the fact that even under the present circumstances, the Institute is carrying on its work as usual. The *Review* and the *Bulletins* are issued with perfect regularity, while at the same time important monographs—of which a mention is being made below among the other publications—are being printed or are about to be printed. It may be mentioned here that, only a few months ago, a large volume on *World Trade in Agricultural Products* had been published. This international activity of the Institute branches out into wide fields, and deals with statistical, economic, legislative and technical questions. Agriculture in tropical countries and horticulture are also within the field of the Institute activity.

The visit of Bulgarian Minister of Agriculture. — Mr. Ivan Bagrianov, Bulgarian Minister of Agriculture, was the guest of the International Institute of Agriculture on October 16. Mr. G. Tassinari, Italian Minister of Agriculture and Forests, and Mr. D. Karadjov, Minister of Bulgaria in Rome, accompanied him in his visit. The eminent visitors were officially received by the President of the Institute, Mr. G. Acerbo, the Vice-President, Mr. Marquis, the Secretary General, Mr. Papi, other Members of the Permanent Committee and Directors of the Institute Bureaus.

To words of greeting addressed to him by Mr. Acerbo in his own name and on behalf of the Members of the Permanent Committee, Mr. Bagrianov replied by expressing his satisfaction at being able to pay homage to the Institute in the name of his country. The Institute, Mr. Bagrianov said, accomplishes a very useful work. As a Member State, Bulgaria, which is mainly an agricultural country, is very much interested in the work of this international institution created by an American, Mr. David Lubin, and founded by His Majesty Victor Emmanuel III.

The Fourth Session of the Committee of the International Forestry Center (C. I. S.). — The fourth session of the Committee of the International Forestry Center was held at Budapest on October 22. The meeting was attended by the Delegates of the States adhering to the Center, and by the Representatives of the International Institute of Agriculture and of the Organisations associated with the C. I. S.

PUBLICATIONS OF THE INTERNATIONAL INSTITUTE OF AGRICULTURE

JUST OUT :—

BIBLIOGRAPHY OF TROPICAL AGRICULTURE, 1939

VIII + 498 pp., 8vo)

PRICE: **15 lire.**

In this volume, which is the VIIIth of the series, are mentioned all the important works on tropical agriculture published in 1939. The name of the author and the exact title of each work are indicated, and a brief summary of the subject treated is given in French or English.

This Bibliography of Tropical Agriculture is of special interest at this time, when, on account of the war, many of the great specialised agricultural publications, which contained bibliographic summaries, are no longer in existence.

IN THE PRESS:—

AGRICULTURAL EDUCATION IN THE WORLD

Vol. IV: CENTRAL AMERICA, SOUTH AMERICA, ASIA, AFRICA, OCEANIA

This volume is the fourth and last of the series on the *Agricultural Education in the World*. The first three volumes dealt with agricultural education in the European and North American countries.

The fourth volume will deal with the agricultural education in Central and South America, in Asia, Africa and Oceania. The text will be in two languages: French and English. Each country will be treated in a uniform manner: the historical survey of agricultural education will be followed by a general survey of their present organisation and a detailed study of the most important institutions, schools, colleges or university branches, where practical and scientific agricultural courses are given.

IN THE PRESS:—

RUBBER, 1935-1939

ECONOMIC AND TECHNICAL ASPECTS

This volume is the seventh in the series published by the International Institute of Agriculture on the *chief agricultural products on the world market.*

This monograph covers the period from 1935 to 1939, period when the market was influenced by the *International Rubber Regulation Agreement.* The history, of wide interest from every aspect, of this regulation of an agricultural product is given in detail. The progress made from 1935 to 1939 in rubber cultivation such as systematic grafting using scions taken from high-yielding, selected trees, is also shown. Many other aspects of the suject are discussed in this monograph which will interest not only rubber experts, but everyone engaged in the development and improvement of tropical countries.

INTERNATIONAL BULLETIN

OF PLANT PROTECTION

1940 No. 11

DISCOVERIES AND CURRENT EVENTS *

ITALIAN EAST AFRICA.

Notes on the geographic Distribution and Biology of *Epilachna* (*Solanophila*) *canina* var. *scioana* and subsp. *vulpecula* †

During his mission in Scirè in March, 1940, Dr. Renzo Candussio of the Agricultural Bureau of Eritrea, had occasion to collect numerous specimens of a lady-bird beetle, *Epilachna* (*Solanophila*) *canina* F., found in the adult state. The specimens in question, pertaining for the most part to the variety *scioana* Sicard (Capra, *in litt.*) having tawny pronotum and legs, and to a small extent to the subspecies *vulpecula* Reiche, having the same parts black instead of tawny, were observed in large numbers in the anfractuosities of trunks of old olive trees near the convent of Amba Enda Gheorghis (altitude 2310 m.) and in the cavities of the large rock formations on the Gamma Mount (altitude 2100 m.) near Az Darò, in Adi Abò. According to the information given by the native monks of the Enda Gheorghis convent, these adults collect in numerous groups after the rains (towards November) and remain thus up to May. In Scirè, these beetles are only found (still according to the same source of information, near the Enda Gheorghis convent and Coiezà; however, it may easily be imagined that their geographic distribution is not restricted. The native name of *E.* (*S.*) *canina* in the region is 'tuhan Deghenà' (Deghenà 'bug') derived from a native legend.

This species may be considered as widespread in many parts of the upper and middle plateaux of the Ethiopian highlands, often spreading to the lower zones. Referring to a paper published in December, 1939 by Dr. Felice Capra of the Civic Museum of Natural History, Genoa, on the Coccinellidae collected by Professor E. Zavattari in the Borana Territory, I. E. A., I may point out that this beetle, as the *scioana* variety and as another variety representing a transitory form between *scioana* and the subspecies *vulpecula*, was found in different localities of south-western Ethiopia, for example, Malca Guba, Arero, Javello, Moyale and Mega from the beginning of April to the beginning of May, 1937. Capra, in his paper mentions the specimens from Scioa and Eritrea in the collec-

* Under this and the next heading the countries are arranged in French alphabetical order.

† Communication from Dr. GIUSEPPE JANNONE, Section of Entomology and Agricultural Zoology, Centre of Agricultural and Zootechnical Research for Italian East Africa, Addis Abeba, transmitted to the Institute by Professor ANTONIO DE BENEDICTIS, Director of the Centre.

tions of the Civic Museum of Natural History at Genoa, other specimens from Kilimanjaro, between Tanganyika and Kenya, and others in the Sicard Collection in the Paris Museum; in the latter case, the place of origin is not indicated, but is probably Scioa, as the name given to the variety by Sicard is *scioana*.

During my mission in Uollo Jeggiu, I. E. A. from May 6 to 13, 1940, for the study and control of another lady-bird beetle, which had caused serious damage to barley crops, on May 8, I had occasion to visit a long and deep valley going towards the Tarchià river, along the road from Dessiè to Debra Tabor and on to Gondar, and on May 10, the Batiè plain, along the Dessiè-Sardò road, where I found many species of Coccinellidae in the adult state feeding on the leaves of some wild plants. In the zone visited on May 8, I also found *E.* (*S.*) *canina* very widespread, not only in the adult state, but also eggs, larvae in all stages of development and pupae. Therefore as regards its general geographic distribution, it may be affirmed that this lady-bird beetle, with different typical subspecies, varieties and transitory forms, extends over a vast zone of East Africa, from the north-west of Tanganyika almost up to the west coast of the Red Sea.

There are no substantial differences in the life history, habits and feeding in the different states, damage caused, etc., between this *Epilachna* and other species of Epilachninae, a group of phytophagous Coccinellidae, and in particular, *E. chrysomelina* F., which in Italy and in other countries attacks Cucurbitaceae (melon, watermelon, etc.), but which can also live on cotton and sesame, as has been observed in some African regions. I saw *E.* (*S.*) *canina* on a wild creeping cucurbit, *Cucumis dipsaceus* Ehrenb., which flourishes in fairly warm regions where water is plentiful, and on other species of *Cucumis* in Eritrea, Amara and Scioa. I myself have never seen it on cultivated Cucurbitaceae. The insect also attacks the leaves of different wild Solanaceae, but here again I have not seen it on cultivated species. It would be advisable, however, to observe Cucurbitaceae and Solanaceae cultivated near zones where wild plants of the same families are attacked by this *Epilachna*, because in my opinion the wild plants alone would not provide sufficient food in the larval and adult states.

The eggs are deposited in small groups on the leaves, and the larvae live either on the upper on the lower surface of the leaf, gnawing one or the other. The surface opposite that which has been eaten becomes skeleton-like and soon withers. Pupating also takes place on the leaves or else on the stems of the infested plants.

This species, in the adult state goes through a period of rest during the months of October, November, December, January, February, March and part of April, in the cracks of the bark of old trees, at the base of shrubs, in rock fissures, under stones and in any other place which is sheltered from rain, wind and attack by other larger species living in the same area. In general, it may be said the insects never hibernate separately but always in more or less large groups. In the good season, that is when plant growth begins with the coming of the small or heavy rains (March-April or June-July), these adults leave their shelters and go onto the leaves, where after pairing, the eggs are deposited, producing 2-3-4 generations according to when the insects made their appearance,

depending on the beginning of the small rains and their continuance and on the commencement of the heavy rains. As is seen, therefore, the period of activity of the insect is the season of small and heavy rains, while the dry season, when many plants of the wild herbaceous flora of the Ethiopian uplands are withered is the rest period.

The months of the year during which *E.* (*S.*) *canina* goes through the different states of development correspond almost exactly with those of the life history of Epilachninae in temperate zones; the only difference is the diversity in the climatic phases which take place during these months, phases which act in the same manner on the biological determinism of Epilachninae in general. Thus, the warm season in the temperate regions has the same effect as the rainy season in the Ethiopian uplands, while the cold season of the former corresponds to the dry season of the latter. Temperature and rainfall, therefore, appear to correspond with a certain constancy on the biological determinism of some insects.

SWITZERLAND.

Spread of the Colorado Beetle in the Country *

Infestation by the Colorado beetle (*Leptinotarsa decemlineata*) has continued in the last few months.

The situation in French Switzerland on August 1, 1940 may be summarized as follows:—

Cantons	Communes infested			Foci reported		
	31-7-39	30-9-39	31-7-40	31-7-39	30-9-39	31-7-40
Geneva	41	42	40	2,300	3,500	spread
Vaud	359	376	247	5,300	20,239	2,926
Neuchâtel	60	61	48	2,300	2,800	277
Bernese Jura	110	143	100	3,500	5,000	spread
Fribourg	169	203	72	1,350	1,528	546
Valais	16	20	10	36	45	53
Total	755	845	517	15,000 approx	33,000 approx	—

If these figures are compared with those of last year on August 1, it is seen that infestation of French Switzerland is not so serious as was expected. The very wet and cold autumn and winter of last year probably killed off a certain number of hibernating adults, especially in heavy and compact soils.

* Communication from the Federal Experiment and Seed Control Station, Lausanne (Mont-Calme), Switzerland.

The frequent rains and low temperatures of June and July 1940, adversely affected not only control operations but also the development of the parasite itself. Although the emergence of the hibernating insects (1st emergence) took place very early (in April), the first generation developed slowly from mid-May to the end of July. In practically all infested areas, the adults of the first generation are only emerging from the ground now (2nd emergence of the year), when they should have made their appearance during the first fortnight of July.

The eggs hatched irregularly; many foci only contained one or two larvae.

It must not be thought, however, that the situation is good everywhere. Some communes, even certain cantons, are so badly infested that it is no longer possible to indicate, even approximately, the number of foci. The foci are already undistinguishable and the larvae are very widespread in practically all the potato fields. Moreover, owing to mobilization and the delay in field operations because of insufficient labour, many foci have certainly been missed. Others have been destroyed and not reported. Undoubtedly, the number of actual foci is much higher than that reported.

In the canton of Geneva, the Plaine de l'Orbe, the Vallée de Délémont, infestation, much heavier than the previous years, is gradually becoming widespread. Other parts of the cantons of Vaud (Broye, Rhône plain), Neuchâtel (Chaux-de-Fonds, Le Locle) and Fribourg (Lac district) are also seriously infested, while a fairly large number of communes situated between these regions are still pratically untouched. In Pays d'Enhaut and in Valais, on the other hand, as yet infestation is slight.

Despite the many difficulties, scholars were able to carry out surveys practically everywhere as usual. These surveys have again proved their utility in that approximately 80 per cent. of the foci were discovered, making it possible to establish more exactly the true extent of infestation in the country.

The first control operations have already been carried out. By limiting spraying to the foci and the immediate surroundings (localized treatments), a considerable economy in material has been realized, while at the same time, effective control is obtained.

In German Switzerland, infestation is still sporadic, the position being more or less the same as that two years ago. The less numerous foci could usually be counted. In some cantons (Solothurn, Aargau), however, the foci increased, and some communes have also been invaded to some extent. As shown in the following table, the Colorado beetle is advancing towards Graubünden; another canton, Glarus, is invaded. On the other hand, up to the present, no focus has been reported in Obwalden and Zug, which were contaminated last year.

The situation in German Switzerland on August 1, 1940 is summarized in the table on the following page.

The recent warm weather has stimulated the second generation. Many beetles will emerge from larvae spread over different areas and unnoticed. All these adults, some of which will spread to regions as yet free from this pest,

constitute a serious danger to next year's plantings. Therefore, it is more than ever necessary to continue control operations without cease and to destroy as many of the beetles as possible before they hibernate.

Cantons	Communes infested			Foci reported		
	31-7-39	30-9-39	31-7-40	31-7-39	30-9-39	31-7-40
Zurich	28	37	89	39	56	562
Bern	128	259	142	525	1,770	905
Luzern	37	44	40	113	886	133
Schwyz	1	1	2	1	1	2
Obwalden	1	1	0	1	1	0
Zug	3	5	0	6	9	0
Solothurn	82	103	82	283	1,478	740
Basel-Stadt	2	3	2	21	33	91
Basel-Land	52	53	68	247	319	1,284
Schaffhausen	4	6	18	4	6	751
St. Gallen	2	16	11	4	26	22
Aargau	109	119	202	444	585	2,600 approx.
Thurgau	1	4	6	1	6	6
Glarus	0	0	3	0	0	5
Total	450	651	665	1,689	5,176	7,101 approx.

LEGISLATIVE AND ADMINISTRATIVE MEASURES

Germany. — By Ordinance of January 23, 1940, the Chief of the Corporation of Agriculture (' Reichsbauernführer ') urges all agricultural officers and representatives to take a keen interest in measures regarding bird protection. (*Nachrichtenblatt für den Deutschen Pflanzenschutzdienst*, Berlin, Anfang Juli 1940, 20. Jahrg., Nr. 7, S. 39).

*** A Circular of February 8, 1940 informs those concerned that, through the initiative of the organization known as the ' Labour Front ', lists of specialists in disinfection problems and in the control of noxious insects have been established at Berlin. These specialists, in case of emergency, will be placed at the disposition of the military and civil authorities.

Provincial lists have been drawn up on the same lines in different parts of the country. (*Ibid.*, S. 38-39).

*** The Minister of Agriculture published on April 22, 1940, the rules to be followed in the application of the ' Cartox ', process, based on the use of a mixture of ethylene oxide and carbonic acid.

The rules are similar to those established by Decree of August 25, 1938 relative to the use of ethylene oxide [see this *Bulletin*, 1939, No. 2, pp. 28-29]. (*Amtliche Pflanzenschutzbestimmungen*, Berlin, 1. Juli 1940, Bd. XII, Nr. 4, S. 77-78).

*** The Ministers of Agriculture and of the Interior published on April 29, 1940, the regulations regarding the use of movable disinfection chambers, regulations established by Decree of May 6, 1936, modifying the provisions relative to the utilization of virulent poisons [see this *Bulletin*, 1936, No. 8, p. 173]. (*Ibid.*, S. 78-79).

*** By Decree of May 23, 1940, the provisions of the Decree dated July 1, 1938 relative to the control of the musk rat [*Fiber zibethicus*: see this *Bulletin*, 1938, No. 12, p. 270] have been extended to former Austria (Ostmark) and to the Sudeten districts (Sudetenland). (*Ibid.*, S. 76).

*** In an Ordinance, dated May 23, 1940, the Minister of Agriculture gives a list of the grape varieties used as stocks, which are authorized for cultivation in Prussia. (*Nachrichtenblatt für den Deutschen Pflanzenschutzdienst*, Nr. 7, S. 38).

*** By virtue of the agreements reached at Buenos Aires on occasion of the International Postal Congress, consignments by post of predatory insects and other enemies of pests are authorized. All consignments of this type, however, before being dispatched, must be authorized by the 'Biologische Reichanstalt' at Berlin-Dahlem, which will also indicate the type of packing to be adopted. (*Ibid.*, S. 39).

*** By Circular of July 9, 1940 relative to the control of the Colorado beetle [*Leptinotarsa decemlineata*], the Minister of Agriculture notifies the communes that every care must be taken in storing the apparatus and control material placed at their disposition, in order to avoid any loss or damage. (*Nachrichtenblatt für den Deutschen Pflanzenschutzdienst*, Berlin, Anfang August 1940, 20. Jahrg., Nr. 8, S. 47).

Germany (Protectorate of Bohemia and Moravia). — By Decree of 29 February, 1940, the provisions in force relative to the protection of fruits and vines, have been revised and supplemented. (*Amtliche Pflanzenschutzbestimmungen*, Berlin, 1. Juli 1940, Bd. XII, Nr. 4, S. 85-87).

*** In the control of animal pests, in particular, rats and mice, Decree of June 6, 1940 prohibits the preparation and use of bait containing virulent germs which might result in the spread of some disease. (*Ibid.*, 1. September 1940, Nr. 5, S. 104-105).

Germany (Oldenburg). — By Decree of May 24, 1940, the control of the corn weevil [*Calandra granaria*] is made compulsory for all persons owning grain stocks or engaged in the utilization of these cereals for the preparation of foodstuffs and stock-feeds. The persons in question will have to carry out the instructions which will be given them by the Plant Protection Service. (*Amtliche Pflanzenschutzbestimmungen*, Berlin, 1. Juli 1940, Bd. XII, Nr. 4, S. 80).

Germany (Ostmark). — By Decree of December 2, 1939, the attributions and functions regarding the regulations on imports, exports and transit in former Australia, according to the resolutions adopted at the International Phylloxera Convention of November 3, 1881, have been taken over by the Minister of Agriculture of the Reich. (*Nachrichtenblatt für den Deutschen Pflanzenschutzdienst*, Berlin, Anfang Juli 1940, 20. Jahrg., Nr. 7, S. 39).

Germany (Saxony). — By Decree of May 22, 1940, the control of asparagus rust [*Puccinia asparagi*] is made compulsory in certain districts, which are indicated, of the country. The provisions are the same as those in force in Thuringia by virtue of the Decree of February 1, 1939 [see this *Bulletin*, 1939, No. 7, pp. 160-161]. The date, however, before which the haulms must be removed, after having cut any asparagus tops remaining in the field, has been changed to April 15 of each year. (*Amtliche Pflanzenschutzbestimmungen*, Berlin, 1. Juli 1940, Bd. XII, Nr. 4, S. 81-82).

Germany (Württemberg). — Decree of March 15, 1940 relative to the protection of bees prohibits the use of preparations containing arsenic and copper in spraying fruit trees and other horticultural and agricultural plants, particularly colza and asparagus crops, during the flowering season.

Trees near bee-hives should only be treated in the evening after the bees have returned to the hives and after having come to an agreement with the farmer in question.

This interdiction does not apply to vines, potatoes and hops, nor to plants grown for experimental purposes. (*Amtliche Pflanzenschutzbestimmungen*, Berlin, 1. Juli 1940, Bd. XII, Nr. 4, S. 82-83).

Italy. — Ministerial Decree of July 5, 1940 authorizes hunting and capture of wild rabbits, declared pests in part of the province of Littoria. (*Gazzetta Ufficiale del Regno d'Italia*, Roma, 13 luglio 1940, anno 81°, n. 163, pp. 2584-2585).

*** A Ministerial Decree of July 8, 1940 establishes the modalities regarding the import, as an exceptional measure, from abroad, of potatoes intended solely for planting in the 1940-41 season. (*Ibid.*, pp. 2585-2587).

*** Ministerial Decree of August 14, 1940, authorizes the hunting and capture of rooks, hooded crows and jackdaws, declared pests in the Province of Agrigento. (*Ibid.*, 23 agosto 1940, anno 81°, n. 197, p. 3141).

Mexico. — By 'acuerdo' of August 4, 1939, the control of the 'chapulín' (*Melanoplus* sp.) is declared necessary in the States of Aguascalientes and Zacatecas. (*Diario Oficial*, México, 12 de septiembre de 1939, tomo CXVI, núm. 10, pág. 2).

*** On August 9, 1939 were added to the 'cuarentena exterior' No. 3 of July 17, 1927, revised November 12, 1929, relative to the pink cotton bollworm [*Platyedra gossypiella*], certain counties of the State of Nuevo México recognized as being infested with 'gusano rosado'. (*Ibid.*).

Sweden. — Royal Decree No. 639 of June 28, 1940 regulates the use of hydrocyanic acid gas in the control of plant pests in greenhouses. (*Svensk författningssamling*, Stockholm den 29 juni 1940, nr 638-640, sid. 1265-1267).

*** Royal Decree No. 768 of August 19, 1940 modifies Royal Decree No. 50 of March 6, 1936 relative to the import of plants and parts of plants. (*Ibid.*, Stockholm den 21 augusti 1940, nr 768-780, sid. [1597]).

Switzerland. — The Decree of the Federal Council of July 6, 1940, relative to the import of fresh fruits, trees, shrubs, living plants and parts of plants, which came into force on July 15, 1940, supersedes the Decree of June 5, 1937 [see this *Bulletin*, 1937, No. 11, pp. 252-253].

To be noted among the changes made in the revised text that, in the case of certain fruits and according to their place of origin, the Division of Agriculture may order complete disinfection by means of methylic gas at the frontier station. In this instance, inspection will be limited to a summary examination of the goods and to the testing of some samples taken from the consignment. The Department of Public Economy will establish a reduced tariff for the inspection of goods subjected to compulsory disinfection. (*Recueil des Lois fédérales*, Berne, 10 juillet 1940, nº 31, p. 1225-1227).

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